Plaintiffs' Exhibit 64
(Redacted)

Page 1

1   UNITED STATES DISTRICT COURT
                   EASTERN DISTRICT OF VIRGINIA
2   ALEXANDRIA DIVISION
3

        _____
4   :
        UNITED STATES OF AMERICA, :
5   et al.,   :
                                         :
6   Plaintiffs   :
                                         :
7   v.   : No. 1:23-cv-00108
                                         :
8   GOOGLE, LLC,   :
                                         :
9   Defendant.   :
        _____:
10
11   Tuesday, February 20, 2024
12
             Video Deposition of RAMAMOORTHI RAVI,
13
        PH.D., taken at the Offices of the United States
14
        Department of Justice, 450 Fifth Street
15
        Northwest, Washington, D.C., beginning at 9:32
16
        a.m. Eastern Standard Time, before Ryan K. Black,
17
        Registered Professional Reporter, Certified
18
        Livenote Reporter and Notary Public in and for
19
        the District of Columbia
20
21
22
23
24   Job No. CS6456599
25

Page 242

1 "Seller Best Practices." And if you flip to the
2 second page, at the bottom you'll see listed as a
3 best practice "to Ensure price floor parity
4 across your tech staff." And it says in the
5 last column, "Establishing consistent price
6 floors minimizes bidder errors and improves
7 bidder decision" -- "decisioning by eliminating
8 ambiguity."
9   All right. Does that surprise you to
10 see that Microsoft's Xandr company lists that as
11 a -- uniform price floors as a best practice?
12   MR. WOLIN: Objection to form.
13   THE WITNESS: Again, I've not thought
14 deeply enough to form a impression of surprise or
15 otherwise.
16 BY MR. ISAACSON:
17   Q.   Right. When you say you haven't thought
18 deeply about it, are you saying that while you're
19 critical of Google implementing uniform pricing
20 rules, that you have no knowledge of whether its
21 competitors consider that to be a best practice
22 in the industry?
23   MR. WOLIN: Objection to form.
24   THE WITNESS: My opinions about uniform
25 pricing rules of Google come from examining the

Page 243

1 context in which they were deployed, which is
2 what I describe in the report.
3   I would need to develop sufficient
4 context to understand whether these rules were
5 appropriate or not and whether I should be
6 surprised or not.
7 BY MR. ISAACSON:
8   Q.   Right. You have not done the work to
9 date to understand whether these rules were
10 appropriate or not; is that correct?
11   MR. WOLIN: Objection to form.
12 BY MR. ISAACSON:
13   Q.   Referring to the unified -- unified
14 pricing rules?
15   MR. WOLIN: Same objection.
16   THE WITNESS: I did the work related to
17 Google's platform in examining the context of its
18 unified pricing rules.
19 BY MR. ISAACSON:

Page 244

21   Q.   All right. And since 2019, in the last
22 five years, do you know whether the industry has
23 moved towards unified pricing rules?
24   MR. WOLIN: Objection to form.
25   THE WITNESS: While I know they have

Page 245

1 moved towards the first-price auction format, I
2 don't know all the details of the floors that
3 they enforce.
4 BY MR. ISAACSON:

21 BY MR. ISAACSON:
22   Q.   And do you agree, broadly speaking, that
23 establishing consistent price floors improves
24 bidder decisioning by eliminating ambiguity?
25   MR. WOLIN: Objection to form.

62 (Pages 242 - 245)

Page 246

```
1        THE WITNESS:  That is of the same
2    nature.
3        MR. WOLIN:  Should we take a break for a
4    few minutes when you get to a good spot?
5        MR. ISAACSON:  Yeah.
6        THE VIDEOGRAPHER:  Going off the record
7    at 4:14.
8        (Recess taken.)
9        THE VIDEOGRAPHER:  Back on the record at
10   4:27.
11   BY MR. ISAACSON:
```

Page 248

Page 247

Page 249

Veritext Legal Solutions

800-567-8658

973-410-4098

Page 306

1 before, I do not analyze any single competitor
2 for their effects on experimentation.
3   MR. ISAACSON: All right. I think I've
4 got five minutes left. I cede it.
5   MR. WOLIN: If we can go off the record
6 and just take five minutes so I can speak with my
7 colleagues, and then we'll come back and see if
8 we have any follow-up questions.
9   THE VIDEOGRAPHER: All right. We are
10 off the record at 6:12 p.m.
11   (Recess taken.)
12   THE VIDEOGRAPHER: Back on the record at
13 6:16.
14   EXAMINATION
15 BY MR. WOLIN:
16   Q. Okay. Professor Ravi, I just have one
17 or two questions for you.
18   Could you pull out your rebuttal report,
19 please, and turn to Paragraph 120 on Page 68?
20   A. Yes, I see it. Yeah.
21   Q. And the final sentence in Paragraph 120
22 reads, "The principal places where I cite source
23 code are where there's ambiguity or where the
24 code contradicts the documents." Did I read that
25 correctly?

Page 307

1   A. That's what I wrote in the last
2 sentence.
3   Q. And is that a true and accurate
4 statement of the work that you did in this case?
5   A. Yes. The principal places. There might
6 be one or other citations that -- to corroborate
7 other things. But the principal places where I
8 cite them are to clarify ambiguity or
9 contradictions.
10   Q. And if you look at the bottom of that
11 page, carrying onto the next page, do you see
12 Paragraph 123?
13   A. Yes, I see it.
14   Q. And specifically Subparagraph B that
15 starts, "Second, I personally conducted and
16 oversaw others." Do you see that?
17   A. Yes. I remember that description.
18   Q. And Subparagraph B explains the
19 methodology you applied in reviewing source code;
20 is that correct?
21   A. Yes. This paragraph was in the context
22 of my response to Professor Rinard's claims, and
23 it lays out the steps that I carried out in -- in
24 performing my own source code analysis.
25   Q. And the steps that are written on this

Page 308

1 page are ones that you applied in analyzing the
2 conducts that you analyzed in reaching your
3 opinions; is that correct?
4   A. Yes. I first considered the programs
5 that were relevant to the conducts I analyzed.
6 And then, from that, I used that to narrow down
7 the portion of the snapshots of code where I
8 would analyze the -- the logic behind the code
9 itself. And then I would use the code that I
10 saw, and any additional questions it raised, to
11 surface further documents. And I would repeat
12 the cycle daily in my source code analysis. Yep.
13   MR. WOLIN: Thank you, Professor Ravi.
14 We have no further questions.
15   MR. ISAACSON: No questions.
16   MR. WOLIN: All right. Thank you. The
17 deposition has ended.
18   THE VIDEOGRAPHER: All right. If that
19 is everything, off the record on February 20th,
20 2024, at 6:19 p.m.
21   (Deposition concluded -- 6:19 p.m.)
22
23
24
25

Page 309

1   CERTIFICATE
2
3   I do hereby certify that I am a Notary
4 Public in good standing, that the aforesaid
5 testimony was taken before me, pursuant to
6 notice, at the time and place indicated; that
7 said deponent was by me duly sworn to tell the
8 truth, the whole truth, and nothing but the
9 truth; that the testimony of said deponent was
10 correctly recorded in machine shorthand by me and
11 thereafter transcribed under my supervision with
12 computer-aided transcription; that the deposition
13 is a true and correct record of the testimony
14 given by the witness; and that I am neither of
15 counsel nor kin to any party in said action, nor
16 interested in the outcome thereof.
17
18   WITNESS my hand and official seal this
19 22nd day (
20
21
22   Notary Public
23
24
25

78 (Pages 306 - 309)

Page 310

```
 1   MICHAEL WOLIN, ESQ.
 2   michael.wolin@usdoj.gov
 3           February 22, 2024
 4   RE:   United States, Et Al v. Google, LLC
 5     2/20/2024, Ramamoorthi Ravi (#6456599)
 6       The above-referenced transcript is available for
 7   review.
 8       Within the applicable timeframe, the witness should
 9   read the testimony to verify its accuracy. If there are
10   any changes, the witness should note those with the
11   reason, on the attached Errata Sheet.
12       The witness should sign the Acknowledgment of
13   Deponent and Errata and return to the deposing attorney.
14   Copies should be sent to all counsel, and to Veritext at
15   erratas-cs@veritext.com.
16    Return completed errata within 30 days from
17   receipt of testimony.
18     If the witness fails to do so within the time
19   allotted, the transcript may be used as if signed.
20
21
22        Yours,
23        Veritext Legal Solutions
24
25
```

Page 312

```
 1   United States, Et Al v. Google, LLC
 2   Ramamoorthi Ravi (#6456599)
 3        ACKNOWLEDGEMENT OF DEPONENT
 4     I, Ramamoorthi Ravi, do hereby declare that I
 5   have read the foregoing transcript, I have made any
 6   corrections, additions, or changes I deemed necessary as
 7   noted above to be appended hereto, and that the same is
 8   a true, correct and complete transcript of the testimony
 9   given by me.
10
11   _____  _____
12   Ramamoorthi Ravi              Date
13   *If notary is required
14        SUBSCRIBED AND SWORN TO BEFORE ME THIS
15        _____ DAY OF _____, 20___.
16
17
18        _____
19        NOTARY PUBLIC
20
21
22
23
24
25
```

Page 311

```
 1   United States, Et Al v. Google, LLC
 2   Ramamoorthi Ravi (#6456599)
 3        E R R A T A  S H E E T
 4   PAGE_____ LINE_____ CHANGE_____
 5   _____
 6   REASON_____
 7   PAGE_____ LINE_____ CHANGE_____
 8   _____
 9   REASON_____
10   PAGE_____ LINE_____ CHANGE_____
11   _____
12   REASON_____
13   PAGE_____ LINE_____ CHANGE_____
14   _____
15   REASON_____
16   PAGE_____ LINE_____ CHANGE_____
17   _____
18   REASON_____
19   PAGE_____ LINE_____ CHANGE_____
20   _____
21   REASON_____
22
23   _____  _____
24   Ramamoorthi Ravi              Date
25
```

79 (Pages 310 - 312)

Veritext Legal Solutions

800-567-8658   973-410-4098

ERRATA SHEET FOR THE TRANSCRIPT OF:

Deponent: Ramamoorthi Ravi

Case Name: *United States et al. v. Google LLC*

Deposition Date: February 20, 2024

CORRECTIONS:

Page	Line	Change or Correction	Reason
49	3	"I assessed the quality of pricing tool" should read "I assessed the quality of **a** pricing tool"	*Transcription Error or Mistake*
51	23-24	"It's at 151, if you need to – if you remember it?" should read "It's at 151, if you need to – **maybe** you remember it**.**"	*Transcription Error or Mistake*
56	4	"a separate one in New York" should read "a separate **event** in New York"	*Transcription Error or Mistake*
57	12	"InMobi helps procure advertising in mobile labs" should read "InMobi helps procure advertising in mobile **apps**"	*Transcription Error or Mistake*
58	1-2	"In some as – in locations in the ad stack" should read "In some as – in **some** locations in the ad stack"	*Transcription Error or Mistake*
62	14	"something I heard about early on" should read "something **I'd** heard about early on"	*Transcription Error or Mistake*
■	■	██████████████████████	████████
■	■	██████████████████████	████████
■	■	██████████████████████	████████
■	■	██████████████████████	████████
99	1-2	"attract new customers or retain existing customers" should read "attract new customers **and** retain existing customers"	*Transcription Error or Mistake*
101	22	"reasonable, yeah. Trying" should read "reasonable **. . .** trying"	*Transcription Error or Mistake*
103	6	"two-sided platforms similarly posits that marquis" should read "two-sided platforms similarly posits that **marquee**"	*Transcription Error or Mistake*

1

103	14-15	"indeed, Ad Exchange is a two-sided platform" should read "indeed, **an ad exchange** is a two-sided platform"	*Transcription Error or Mistake*
104	2	"ad service have publishers and the ad exchanges," should read "ad **servers** have publishers and the ad exchanges,"	*Transcription Error or Mistake*
104	4	"SSBs" should read "**SSPs**"	*Transcription Error or Mistake*
███	██	████████████████████████████████	████████
123	12	"We talked about **the** header bidding" should read "We talked about header bidding"	*Transcription Error or Mistake*
134	6	"I like that DFP made AdX more attractive…" should read "I **write** that DFP made AdX more attractive..."	*Transcription Error or Mistake*
136	21-22	"I have no opinion about specific features and other specific features…" should read "I have no opinion about other specific features."	*Clarification*
138	15-16	"And you said that" should read "And **you've** said that"	*Transcription Error or Mistake*
143	24-25	"That's generally correct, **yeah**." should read "That's generally correct."	*Transcription Error or Mistake*
150	13-14	"Google had its own implementation of header bidding…" should read "Google had its own **alternative to** header bidding…"	*Clarification*
███	██	████████████████████████████████	████████
███	██	████████████████████████████████	████████
███	██	████████████████████████████████	████████
177	15-16	"MR. WOLIN: It's written for MBA students with short attention spans." is an answer and should not be attributed to Mr. Wolin	*Transcription Error or Mistake*
198	21	"dynamic revenue sharing to applying to Google" should read "dynamic revenue sharing to **apply** to Google"	*Transcription Error or Mistake*
207	22	"DV360 perform this bid shading" should read "DV360 **performed** this bid shading"	*Transcription Error or Mistake*
███	███	████████████████████████████	████████

███	█	████████████████████	████████
███	█	████████████████████	████████
███	███	████████████████████	████████
███	███	████████████████████	████████
███	██	████████████████████	████████
237	15	"…a natural strategy to share" should read "…a natural strategy to **shade**"	*Transcription Error or Mistake*
███	███	████████████████████	████████
███	█	████████████████████	████████
███	██	████████████████████	████████
294	9-11	"I examined the results of extensive computer models in arriving at the opinion" should read "I examined the results of extensive computer models in arriving at the **opinions**"	*Transcription Error or Mistake*
███	█	████████████████████	████████

Date: _____03/22/2024_____   Signature: _____

3